U.S. Application No.: 10/689,221
AMENDMENT B

Attorney Docket: 3975.025

IN THE CLAIMS:

This listing of the claims will replace all prior versions, and listings, of claims in the application:

1. (previously presented) A powder mixture for resorbable calcium phosphate biocements, characterized by a fraction mixture consisting of (relative to the total volume of the powder mixture):

40-99% by volume of powder having a particle size of 0.1-10μm

1-20% by volume of powder having a particle size of 10-43μm

0-59% by volume of powder having a particle size of 43-315μm

which powder is obtained by grinding the spontaneously crystallizing melts of a material comprising crystalline and X-ray amorphous phases, which material

a) according to ^{31}P-NMR measurements, contains Q_0-groups of orthophosphate and Q_1-groups of diphosphate, the orthophosphates or Q_0-groups making up 65 to 99.9% by weight relative to the total phosphorus content of the powder mixture and the diphosphates or Q_1-groups making up 0.1 to 35% by weight relative to the total phosphorus content of the powder mixture, and

b) according to X-ray diffractometric measurements and relative to the total weight of the powder mixture, contains 35 to 99.9% by weight of a main crystal phase selected from the group consisting of $Ca_2K_{1-x}Na_{1+x}(PO_4)_2$, where $x = 0.1$ to 0.9, $Ca_{10}Na(PO_4)_7$, $Ca_{10}K(PO_4)_7$, mixtures thereof and mixed crystals according to the general formula $Ca_{10}K_xNa_{1-x}(PO_4)_7$, where $x = 0$ to 1, and 0.1 to 20% by weight of a substance selected from the group consisting of $Na_2CaP_2O_7$, $K_2CaP_2O_7$, $Ca_2P_2O_7$, $NaPO_3$, KPO_3 and mixtures thereof as a secondary crystal phase, and

c) besides the main crystal phase, contains an X-ray amorphous phase which in total makes up 0.1 to 65% by weight relative to the total weight of the powder mixture

and which material is prepared by combining the substances 30-55% by weight CaO, 35-50% by weight P_2O_5, 1-20% by weight Na_2O, 0.5-20% by weight K_2O and 0.1-5% by weight